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Hiroshi Yahata

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/552,371 | Applicant(s) YAHATA ET AL. | |
| | Examiner HUNG Q. DANG | Art Unit 2621 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/07/2005, 02/10/2006, 03/29/2006, 07/05/2006,</u> | 6) <input type="checkbox"/> Other: _____ |
| <u>06/07/2007, 08/02/2007, 12/12/2007.</u> | |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/02/2008 has been entered.

Response to Arguments

Applicant's arguments filed 03/07/2008 have been considered but are moot in view of the new ground(s) of rejection.

At page 5, Applicant makes a request that the provisional obviousness-type double patenting rejections be held in abeyance. In response, the Examiner acknowledges Applicant's request but is continuing to make the provisional double-patenting rejections since there are still conflicting claims.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 6 and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2 and 3 of copending Application No. 11/594,161 in view of Harumoto et al. (US Patent 6,801,707).

Claim 6 of this application recites an information recording apparatus for encoding video information and audio information to a system stream and recording the system stream to a recording medium, wherein: the system stream being allowed to have a first format (TS) and a second format (PS); the information recording apparatus comprising: a first encoding section operable to encode video information and audio information in a predetermined encoding manner according to the first format (TS) to generate a video elementary stream and an audio elementary stream; a second encoding section operable to perform system-encoding by multiplexing the video elementary stream and the audio elementary stream to generate the system stream according to the first format (TS); and a control section operable to control the first encoding section and the second encoding section; wherein the first format (TS) is allowed to have a constrained format used for converting the system stream from the

first format (TS) to the second format (PS); the control section controls the first and second encoding sections so that each encoding is done according to the constrained format, the first format (TS) has a structure for storing data segmented in first packets, the second format (PS) has a structure for storing data segmented in packs, and the pack is larger than the first packet in size; the first packet stores segmented data of a second packet, the second packets stores video information or audio information, the second packet storing the audio information including at least one audio frame, and according to the constrained format, a predetermined number of first packets including either the video information or the audio information are grouped and managed as a multiplexing unit, and a total payload data size of first packets managed in the multiplexing unit is smaller than a payload data size of the pack, the multiplexing unit is a processing unit to convert the first format (TS) to the second format (PS), and a first one of complete audio frames in the multiplexing unit including only the audio information is a first one of audio frames in a payload of the second packet.

Claim 2 of Application No. 11/594161 recites an information recording apparatus for encoding video information and audio information to system stream and recording the system stream to a recoding medium, wherein: the system stream being allowed to have a first format (TS) and a second format (PS); the information recording apparatus comprising: a first encoding section operable to encode video information and audio information in a predetermined encoding manner according to the first format (TS) to generate video elementary stream and audio elementary stream; a second encoding section operable to perform system-encoding by multiplexing the video elementary

stream and the audio elementary stream to generate the system stream according to the first format (TS); a control section operable to control the first encoding section and the second encoding section; the first format (TS) is allowed to have a constrained format used for converting the system stream from the first format (TS) to the second format (PS); wherein the control section controls the first and second encoding section so that each encoding is done according to the constrained format, and the first format (TS) has a structure for storing data segmented in first packets, the second format (PS) has a structure for storing data segmented in packs, the pack is larger than the first packet in size; the first packet stores segmented second packet, the second packets stores video information and audio information and includes at least one audio frame, according to the constrained format, a predetermined number of first packets are grouped and managed as a multiplexing unit, and total data size of first packets managed in the multiplexing unit is smaller than data size of the pack, and the first one of complete audio frames in the multiplexing unit is the first one of audio frames in a payload of the second packet. It is also recognized by one of ordinary skill in the art that the multiplexing unit is a processing unit to convert the first format to the second format.

Claim 2 of Application No. 11/594161 does not recite the predetermined number of first packets including either the video information or the audio information.

Harumoto et al. disclose first packets including either the video information or the audio information (Fig. 1; column 2, lines 28-44; column 2, lines 20-25).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the structure of the first packet disclosed by Harumoto et

al. into the apparatus recited in claim 2 of Application No. 11/594161 to make the apparatus compatible with the MPEG standard, which also allows the first packet, which is a pack, to have only one second elementary packet, which is either a video packet or an audio packet. The incorporated feature would make the apparatus also able to record this specific MPEG stream, thus, making it completely compatible with the standard.

Claim 11 of this application recites an information recording method including encoding video information and audio information to a system stream and recording the system stream to a recording medium, the system stream being allowed to have a first format (TS) and a second format (PS); the first format (TS) is allowed to have a constrained format used for converting the system stream from the first format (TS) to the second format (PS); the first format (TS) has a structure for storing data segmented in first packets, the second format (PS) has a structure for storing data segments in packs, and the pack is larger than the first packet in size; and the first packet stores segmented data of a second packet, and the second packet stores video information or audio information, the second packet storing the audio information including at least one audio frame; the information recording method comprising: encoding video information and audio information in a predetermined encoding method according to the constrained format (TS) to generate a video elementary stream and an audio elementary stream; performing system-encoding by multiplexing the video elementary stream and the audio elementary stream according to the constrained format (TS) to generate the system stream; and grouping and managing a predetermined number of

first packets including either the video information or the audio information as a multiplexing unit, wherein a total payload data size of the first packets managed in the multiplexing unit is smaller than a payload data size of the pack, the multiplexing unit being a processing unit to convert the first format (TS) to the second format (PS), and a first one of complete audio frames in the multiplexing unit is the a one of audio frames in a payload of the second packet.

Claim 3 of Application No. 11/594161 recites an information recording method including encoding video information and audio information to system stream and recording the system stream to a recording medium, the system stream being allowed to have a first format (TS) and a second format (PS); the first format (TS) is allowed to have a constrained format used for converting the system stream from the first format (TS) to the second format (PS); the first format (TS) has a structure for storing data segmented in first packets, the second format (PS) has a structure for storing data segments in packs, the pack is larger than the first packet in size; the first packet stores segmented second packet, the second packet stores the video information and audio information and includes at least one audio frame; the information recording method comprising: encoding video information and audio information in a predetermined encoding method according to the constrained format (TS) to generate video elementary stream and audio elementary stream; performing system-encoding by multiplexing the video elementary stream and the audio elementary stream according to the constrained format (TS) to generate the system stream; and grouping and managing a predetermined number of first packets as a multiplexing unit, wherein the total data

size of the first packets managed in the multiplexing unit is smaller than data size of the pack, and the first one of complete audio frames in the multiplexing unit is the first one of audio frames in a payload of the second packet. It is also recognized by one of ordinary skill in the art that the multiplexing unit is a processing unit to convert the first format to the second format.

Claim 3 of Application No. 11/594161 does not recite the predetermined number of first packets including either the video information or the audio information.

Harumoto et al. disclose first packets including either the video information or the audio information (Fig. 1; column 2, lines 28-44; column 2, lines 20-25).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the structure of the first packet disclosed by Harumoto et al. into the method recited in claim 3 of Application No. 11/594161 to make the method compatible with the MPEG standard, which also allows the first packet, which is a pack, to have only one second elementary packet, which is either a video packet or an audio packet. The incorporated feature would make the method also able to record this specific MPEG stream, thus, making it completely compatible with the standard.

This is a provisional obviousness-type double patenting rejection.

Claims 6 and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2 and 3 of copending Application No. 11/594,137 in view of Harumoto et al. (US Patent 6,801,707).

Claim 6 of this application recites an information recording apparatus for encoding video information and audio information to a system stream and recording the system stream to a recoding medium, wherein: the system stream being allowed to have a first format (TS) and a second format (PS); the information recording apparatus comprising: a first encoding section operable to encode video information and audio information in a predetermined encoding manner according to the first format (TS) to generate a video elementary stream and an audio elementary stream; a second encoding section operable to perform system-encoding by multiplexing the video elementary stream and the audio elementary stream to generate the system stream according to the first format (TS); and a control section operable to control the first encoding section and the second encoding section; wherein the first format (TS) is allowed to have a constrained format used for converting the system stream from the first format (TS) to the second format (PS); the control section controls the first and second encoding sections so that each encoding is done according to the constrained format, the first format (TS) has a structure for storing data segmented in first packets, the second format (PS) has a structure for storing data segmented in packs, and the pack is larger than the first packet in size; the first packet stores segmented data of a second packet, the second packets stores video information or audio information, the second packet storing the audio information including at least one audio frame, and according to the constrained format, a predetermined number of first packets including either the video information or the audio information are grouped and managed as a multiplexing unit, and a total payload data size of first packets managed in the

multiplexing unit is smaller than a payload data size of the pack, the multiplexing unit is a processing unit to convert the first format (TS) to the second format (PS), and a first one of complete audio frames in the multiplexing unit including only the audio information is a first one of audio frames in a payload of the second packet.

Claim 2 of Application No. 11/594137 recites an information recording apparatus for encoding video information and audio information to system stream and recording the system stream to a recording medium, wherein: the system stream being allowed to have a first format (TS) and a second format (PS); the information recording apparatus comprising: a first encoding section operable to encode video information and audio information in a predetermined encoding manner according to the first format (TS) to generate video elementary stream and audio elementary stream; a second encoding section operable to perform system-encoding by multiplexing the video elementary stream and the audio elementary stream to generate the system stream according to the first format (TS); a control section operable to control the first encoding section and the second encoding section; the first format (TS) is allowed to have a constrained format used for converting the system stream from the first format (TS) to the second format (PS); wherein the control section controls the first and second encoding section so that each encoding is done according to the constrained format, and the first format (TS) has a structure for storing data segmented in first packets, the second format (PS) has a structure for storing data segmented in packs, the pack is larger than the first packet in size; the first packet stores segmented second packet, the second packets stores video information and audio information and includes at least one audio frame,

according to the constrained format, a predetermined number of first packets are grouped and managed as a multiplexing unit, and total data size of first packets managed in the multiplexing unit is smaller than data size of the pack, and the first one of complete audio frames in the multiplexing unit is the first one of audio frames in a payload of the second packet. It is also recognized by one of ordinary skill in the art that the multiplexing unit is a processing unit to convert the first format to the second format.

Claim 2 of Application No. 11/594137 does not recite the predetermined number of first packets including either the video information or the audio information.

Harumoto et al. disclose first packets including either the video information or the audio information (Fig. 1; column 2, lines 28-44; column 2, lines 20-25).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the structure of the first packet disclosed by Harumoto et al. into the apparatus recited in claim 2 of Application No. 11/594137 to make the apparatus compatible with the MPEG standard, which also allows the first packet, which is a pack, to have only one second elementary packet, which is either a video packet or an audio packet. The incorporated feature would make the apparatus also able to record this specific MPEG stream, thus, making it completely compatible with the standard.

Claim 11 of this application recites an information recording method including encoding video information and audio information to a system stream and recording the system stream to a recording medium, the system stream being allowed to have a first format (TS) and a second format (PS); the first format (TS) is allowed to have a

constrained format used for converting the system stream from the first format (TS) to the second format (PS); the first format (TS) has a structure for storing data segmented in first packets, the second format (PS) has a structure for storing data segments in packs, and the pack is larger than the first packet in size; and the first packet stores segmented data of a second packet, and the second packet stores video information or audio information, the second packet storing the audio information including at least one audio frame; the information recording method comprising: encoding video information and audio information in a predetermined encoding method according to the constrained format (TS) to generate a video elementary stream and an audio elementary stream; performing system-encoding by multiplexing the video elementary stream and the audio elementary stream according to the constrained format (TS) to generate the system stream; and grouping and managing a predetermined number of first packets including either the video information or the audio information as a multiplexing unit, wherein a total payload data size of the first packets managed in the multiplexing unit is smaller than a payload data size of the pack, the multiplexing unit being a processing unit to convert the first format (TS) to the second format (PS), and a first one of complete audio frames in the multiplexing unit is the a one of audio frames in a payload of the second packet.

Claim 3 of Application No. 11/594137 recites an information recording method including encoding video information and audio information to system stream and recording the system stream to a recording medium, the system stream being allowed to have a first format (TS) and a second format (PS); the first format (TS) is allowed to

have a constrained format used for converting the system stream from the first format (TS) to the second format (PS); the first format (TS) has a structure for storing data segmented in first packets, the second format (PS) has a structure for storing data segments in packs, the pack is larger than the first packet in size; the first packet stores segmented second packet, the second packet stores the video information and audio information and includes at least one audio frame; the information recording method comprising: encoding video information and audio information in a predetermined encoding method according to the constrained format (TS) to generate video elementary stream and audio elementary stream; performing system-encoding by multiplexing the video elementary stream and the audio elementary stream according to the constrained format (TS) to generate the system stream; and grouping and managing a predetermined number of first packets as a multiplexing unit, wherein the total data size of the first packets managed in the multiplexing unit is smaller than data size of the pack, and the first one of complete audio frames in the multiplexing unit is the first one of audio frames in a payload of the second packet. It is also recognized by one of ordinary skill in the art that the multiplexing unit is a processing unit to convert the first format to the second format.

Claim 3 of Application No. 11/594137 does not recite the predetermined number of first packets including either the video information or the audio information.

Harumoto et al. disclose first packets including either the video information or the audio information (Fig. 1; column 2, lines 28-44; column 2, lines 20-25).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the structure of the first packet disclosed by Harumoto et al. into the method recited in claim 3 of Application No. 11/594137 to make the method compatible with the MPEG standard, which also allows the first packet, which is a pack, to have only one second elementary packet, which is either a video packet or an audio packet. The incorporated feature would make the method also able to record this specific MPEG stream, thus, making it completely compatible with the standard.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naimpally (US Patent 5,619,337), Oishi et al. (US Patent 6,141,490), and Harumoto et al. (US Patent 6,801,707).

Regarding claim 6, Naimpally discloses an information recording apparatus for encoding video information and audio information to a system stream and recording the system stream to a recording medium (Fig. 1B; column 3, lines 12-21), the system stream is allowed to have a first format (TS) (column 5, lines 31-62; column 6, line 48 – column 7, line 9; Fig. 3C) and a second format (PS) (column 6, lines 27-47; Fig. 3A); the first format (TS) has a structure for storing data segmented in first packets (“P0 tp1”, “P0

tp2", and "P0 tp3" in Fig. 3C; column 6, line 64 – column 7, line 2), the second format (PS) has a structure for storing data segmented in packs (packs "P0, P1, and P2" in Fig. 3A), and the pack is larger than the first packet in size (Fig. 3C; pack P0 contains packets "P0 tp1", "P0 tp2", and "P0 tp3" and other information "TS" and "TCL"). Also Naimpally discloses the first format (TS) is allowed to have a constrained format used for converting the second format to the first format (Fig. 3A; Fig. 3B; and Fig. 3C), according to the constrained format: a predetermined number of first packets are grouped and managed as a multiplexing unit (Fig. 3C), and a total payload data size of first packets managed in the multiplexing unit is smaller than a payload data size of the pack (Fig. 3C; pack P0 contains packets "P0 tp1", "P0 tp2", and "P0 tp3" and other information "TS" and "TCL"); and the multiplexing unit is a processing unit to convert the first format (TS) to the second format (PS) (Fig. 3C; Fig. 3A).

However, Naimpally does not disclose the first packet stores segmented data of a second packet, and the second packet stores video information or audio information, the second packet storing the audio information including at least one audio frame; the constrained format used for converting the system stream from the first format (TS) to the second format (PS); according to the constrained format: a first one of complete audio frames in the multiplexing unit including only the audio information is a first one of audio frames in a payload of the second packet.

Oishi et al. discloses a recording medium having thereon MPEG video stream data (column 3, lines 22-31), in which the first packet stores segmented data of second packet (first packet corresponds to "pack" in Fig. 2; second packet corresponds to

“packet (video)” or “packet (audio)” in Fig. 2;), and the second packet stores video information or audio information, the second packet storing the audio information including at least one audio frame (Fig. 2); the first format (TS) is allowed to have a constrained format used for converting the system stream from the first format to the second format (column 1, line 60 – column 2, line 15; column 15, line 66 – column 16, line 15); according to the constrained format: a first one of complete audio frames in the multiplexing unit is a first one of audio frames in a payload of the second packet (Fig. 2).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the first packet structure with respect to the second packet structure, the second packet structure with respect to the video frames and audio frames together with the constrained format used for converting the system stream from the first format to the second format and the structure of the constrained format with respect to the audio frames as disclosed by Oishi et al. into the recording medium disclosed by Naimpally to conform to MPEG standards. The incorporated features would enhance the compatibility of the recording medium with popular existing standards such as MPEG.

However, the proposed combination of Naimpally and Oishi et al. does not disclose the predetermined number of first packets including either the video information or the audio information.

Harumoto et al. disclose first packets including either the video information or the audio information (Fig. 1; column 2, lines 28-44; column 2, lines 20-25).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the structure of the first packet disclosed by Harumoto et al. into the apparatus disclosed by Naimpally and Oishi et al. to make the apparatus compatible with the MPEG standard, which also allows the first packet, which is a pack, to have only one second elementary packet, which is either a video packet or an audio packet. The incorporated feature would make the apparatus also able to record this specific MPEG stream, thus, making it completely compatible with the standard.

Claim 11 is rejected as discussed in claim 6 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG Q. DANG whose telephone number is (571)270-1116. The examiner can normally be reached on M-Th:7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thai Tran can be reached on 571-272-7382. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hung Q Dang/
Examiner, Art Unit 2621

/Thai Tran/
Supervisory Patent Examiner, Art Unit 2621